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DEPARTMENT OF NATURAL RESOURCES

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November 25, 2013

Ryan Ellis, P.E.
Energy Fuels Resources (USA) Inc.
225 Union Boulevard, Suite 600
Lakewood, Colorado 80228

Subject: Third Review of Notice of Intention to Commence Large Mining Operations, Energy Fuels Resources, Daneros Mine, M/037/0126, San Juan County, Utah

Dear Mr. Ellis:

The Division of Oil, Gas and Mining has reviewed the referenced Notice of Intention to Commence Large Mining Operations (NOI) which was received October 1, 2013. The attached comments will need to be addressed before tentative approval may be granted.

The comments are listed under the applicable Minerals Rule heading; please format your response in a similar fashion. Please address only those items requested in the attached technical review by sending replacement pages of the original mining notice using **redline and strikeout** text. After the notice is determined technically complete, the Division will ask that you submit two clean copies of the complete and corrected plan. Upon final approval, both copies will be stamped approved with one returned for your records.

The Division will suspend further review of the NOI until your response to this letter is received. Please contact the appropriate reviewer with questions about the comments: Mike Bradley at 801-538-5332 (mpb; lead reviewer, soils, vegetation); Peter Brinton at 801-538-5258 (pnb; deleterious materials, hydrology, and engineering), and April Abate at 801-538-5214 (aaa; hydrology, groundwater, geology).

Sincerely,

Paul B. Baker
Minerals Program Manager

PBB: mpb: pb
Attachment: Review
cc: Ted McDougall, BLM Monticello FO (tmcdouga@blm.gov)
P:\GROUPS\MINERALS\WP\M037-SanJuan\M0370126-DanerosLMO\final\Rev3-5683-11252013.doc

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UTAH DNR OIL, GAS & MINING

THIRD REVIEW OF NOTICE OF INTENTION
TO COMMENCE LARGE MINING OPERATIONS
Energy Fuels Resources (USA)
Daneros Mine
M/037/0126
November 25, 2013

R647-4-105 - Maps, Drawings & Photographs

General Map Comments

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
1	Attach G Figs. 3, 4, & 5 Omission	SWPPP maps do not delineate stormwater outfall locations. Please indicate locations of all stormwater outfalls and sampling locations.	aaa/mpb	
2	Attach G	Figures 3 and 4 of the SWPPP do not have contours. Please provide a contour overlay on these maps as shown in Figure 5.	mpb	
3	Attach G	Legend on Figure 4 indicates a "Collection Ditch," but there is no such feature on the map. Please either remove this item from the legend, or if there is a collection ditch to be shown on this figure, please show it.	mpb	
4	Attach G	Figure 5 - How does the collection ditch cross the diversion ditch to get to the small pond? (A culvert is shown on Figure 9 of NOI, but the NOI does not provide invert or outlet elevations. Does it go over or under the collection ditch?) Consider conducting all runoff from DRA across the road into the pond fed by the culvert; this may require excavating the pond in addition to berming to obtain necessary volume. It is unclear if the small pond near the South Portal would then be necessary.	mpb	
5	Attach G	Figure 4 & 5 - Runoff from the ore storage areas should be retained on site. On Figure 5, consider swapping the location of the ore pile with inert material or topsoil stockpiles to put the ore pad within the containment feature around the shop area. Otherwise, please provide enough storage volume to contain runoff from the ore storage area. It is not clear that the proposed berm around the ore stockpile areas does this adequately.	mpb	

105.1 - Topographic base map, boundaries, pre-act disturbance

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
6	NOI Figure 4	To be consistent with Figures 5 & 6, please correct the legend to show "Existing Disturbance" rather than "Permitted Disturbed Area."	mpb	
7	Figure 7 (NOI) & Figure 3 (App. D)	Correct or explain the discrepancy between the ore and low grade pile locations shown on the two figures. Identify the approximate location of the existing ore and low grade piles.	pnb	

105.2 - Surface facilities map

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
8	NOI Figs 7, 8 & 9	These figures show berms with apparent arbitrary locations, running perpendicular to contour lines, up and down slopes and ridges, generally ineffective for stormwater management. Where needed, berms should align with contours to direct runoff away from sensitive areas and toward diversions and catchments. There is no reason to create more disturbed area than necessary. Figure 9 shows a berm around all sides of the South Portal and ore stockpile areas. How would these areas be accessed by vehicles?	mpb	

105.3 - Drawings or Cross Sections (slopes, roads, pads, etc.)

Comment	Sheet/Page/ Map/Table	Comments	Initials	Review Action
9	Figs 15, 16, & 17	All slope grades are shown as approximate and do not delineate horizontal and vertical values. Please specify that slopes will be "Maximum" XH:YV.	mpb	
10	Figure 15 – 17	Original Comment: Per R647-4-110.4, the permanent location of deleterious materials needs to be shown on a map. This can be shown either on a separate map or, if reasonable, on Figures 13-15. Revised Comment: Since the purpose of these maps is to also show reclamation treatments, clarify on these maps that deleterious materials will be capped with the non-deleterious cover in addition to topsoil as part of reclamation, consistent with the proposed reclamation plan.	pnb	

R647-4-106 - Operation Plan

106.1 - Minerals mined

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action

11	Pg 5	The plan says the mineral to be mined is "uranium." Uranium is a chemical element. Please specify what the economic mineral(s) containing the uranium is/are that will be in the ore sent to the mill for processing. (Carnotite, uraninite, etc.)	mpb	

106.2 - Type of operations conducted, mining method, processing etc.

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
12	Pg 5	Please provide a brief discussion of the type of underground mining, i.e. use of drills/jacklegs, blasting, mucking and hauling, use of water, ore/development rock delineation/separation, etc.	mpb	

106.3 - Estimated acreages disturbed, reclaimed, annually

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
13	Pg 12, Table 4 & affected maps	If any of these review comments require increases or reductions in disturbed and/or reclaimed areas, please revise this table and all maps to show those changes.	mpb	

106.4 - Nature of materials mined, waste and estimated tonnages

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
14	Appendix D, Page 15, 5.0	Original Comment 32: "To be consistent with the main NOI text, indicate that there will also be an inert rock component of the cover between the soil and the potentially deleterious rock." Revised Comment: If you are going to discuss the soil cover, you should also discuss the clean layer of rock used to cover the deleterious rock for clarification. It appears that there may have been a typo here.	pnb	
15	Appendix D, Page 8, 4.1.1	Original Comment 34: "Include the ABA data provided in Appendix J of the 2009 Environmental Assessment. Summarize the conclusions in Attachment D." Revised Comment: Identify what was sampled by Utah Energy Corporation for the 2011 EA, since it is unclear here.	pnb	
16	Appendix D, Figures	Original Comment 37: "Provide a map showing the locations for … multi-increment waste and ore pile samples (including the decision unit area	pnb	

	1 - 3	boundaries), and the composited ore and low-grade ore samples . . . ." Revised Comment: Composited and multi-increment samples are not shown on Figures 1, 2, and 3. Identify these locations on Figure 3.		
17	Appendix D, Addition	Add a brief section discussing the annual rock characterization testing required by the BLM.	pnb	

106.5 - Existing soil types, location, amount

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
18	Attach C	There was some misunderstanding regarding the Hydrologic Soils Groups (HSG) for the site. The attached map shows the distribution of HSGs "B" and "D" throughout the entire site, approximately being a 55%-45% overall. The calculations provided in Attachment C, Drainage Plan, assumed a 55%-45% split for each small basin, which is not correct. HSG "C" was used around the South Portal, also not correct as indicated on the attached map. The reason for previously commenting that the area was distributed between mostly "B" and "D" HSGs was to point out that using HSG "A" in the original assessment was inappropriate. HSGs are specific to each soil type, and can be obtained from the same Web Soil Survey used in the report. HSG's have a significant impact on the calculation of predicted runoff volumes. Most of the basins shown on the maps of Attachment C would likely have fallen in the HSG "B" type, except around the Daneros Portal area which would likely be dominated by HSG "D." It is up to the operator to delineate each drainage area and correctly determine the proper HSG for the calculations. Please recalculate the area around the Daneros Portal. The other areas are acceptable as-is, but may be revised if the operator so chooses. The previous review provided guidance for obtaining the HSG properties on the NRCS Web Soil Survey for specific locations. The Division can assist if requested.	mpb	

106.6 - Plan for protecting & re-depositing soils

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
19	Pg 18 & 19	This section of the plan does not discuss protecting salvaged topsoil, but the final paragraph contained in Section 109.3 does. That paragraph should be moved into this section. See comment 26 below.	mpb	
20	Pgs 12 & 18-19	Using the total disturbance acreage from Section 106.3 and the scavenged topsoil numbers in this section calculate out to having enough topsoil to	mpb	

		provide an average cover of only 4.7 inches over the entire disturbed area (28,700 cubic yards, 46.3acres). Section 110.5 says 6 inches of topsoil is to be placed throughout the site, including 18 inches of "inert material and topsoil" over DRA's. Please address this discrepancy.		

106.7 - Existing vegetation - species and amount

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
21	Appx F-Vegetation Inventory	R647-4-106.7 refers to 111.13 which states: "Revegetation shall be accomplished when: 13.11. The revegetation has achieved 70% of pre-mining vegetative ground cover. If the pre-mining vegetative ground cover is unknown, the ground cover of an adjacent undisturbed area that is representative of the pre-mining ground cover will be used as a standard." Figures 2 and 3 of the Vegetation Inventory show that two of the sample transects and half of a third done at the South Portal (SP-2, SP-3 and SP-1, respectively), and transect BE-1 at the Bullseye Portal area are located inside previously disturbed areas. This data is not representative of the "pre-mining" vegetative cover and will not be used to determine post mining reclamation success.	mpb	

106.8 - Depth to groundwater, extent of overburden, geology

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
22	Section 109.1 Pg. 33	The operator has indicated that groundwater quality data is not available for Bullseye Spring and Bullseye Well. Energy Fuels has committed to developing a water monitoring program at these locations. Prior to final approval of the plan, please arrange for a meeting with OGM and BLM to develop the water monitoring program. As previously stated, the Division recommends a minimum of one year of baseline monitoring for, including but not limited to, flow data and field parameters, such as specific conductivity, pH, and temperature. Recommended laboratory analytical parameters include heavy metals, nitrates, sulfides and sulfate. The finalized monitoring plan will then be incorporated into the LMO plan.	aaa	

106.9 - Location & size of ore, waste, tailings, ponds

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
23	Attach. C	Please revise Tables 2-5 and 4-5 - Summary for Temporary Sediment Ponds. Both of these tables should present the information consistently. Table 2-5	aaa	

		shows the 100-year, 24-hour precipitation rate for the region, acreage of the basin, and the volume of runoff a 100-year, /24-hour storm event would produce. It also presents clearly the volume and dimensions of the proposed sediment pond. Please adopt this format for table 4-5.		
24	Attach. C	Please indicate if the ponds are designed for total containment or if they are to be equipped with an outfall location for discharge.	aaa	

R647-4-109 - Impact Assessment

109.1 - Impacts to surface & groundwater systems

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
25	Appx G - SWPPP	The SWPPP for this facility should be modeled after existing permits for other Energy Fuels sites, such as Energy Queen (UPDES Permit UT0025712), which include sampling and analysis protocols required for uranium mining activities (SIC Code 1094).	mpb	
26	Page 29, para 4	The NOI states that ephemeral drainages that occasionally will experience large storm events and resulting discharge from the operation do not have "aquatic ecological receptors that could be affected." In a rainfall event that is widespread and of significant volume and duration, it is quite possible for runoff from the mine site to reach Lake Powell. Even if rainfall from a single event is not sufficient to reach Lake Powell, sediment from the mine can migrate downstream to a receiving water body through a series of successive rainfall events. Please rephrase this paragraph to acknowledge that, while the ephemeral streams themselves may not be aquatic ecological receptors, there is a connection to aquatic ecological receptors (Lake Powell) through them.	pnb/ mpb	
27	Page 30, Omission	Indicate together with a brief explanation whether subsidence is likely to impact ground water or springs. Mining is relatively shallow, and it is unclear whether any perched groundwater or springs overlie current or future workings.	pnb	

109.3 - Impacts on existing soils resources

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
28	Pg.33-34	The final paragraph of this section should be moved to Section 106.6, Plan for Protecting and Redepositing Topsoil. See comment 19 above.	mpb	

109.4 - Slope stability, erosion control, air quality, safety

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
29	Attach. G	The SWPPP indicates in Section 5.8.3 that the sediment ponds will be designed with overflow spillways. However, overflow spillways were not included in the design plan for temporary sediment ponds in the Drainage Control Plan. Please show the spillways on the plan figures and provide design calculations for them.	aaa	

109.5 - Actions to mitigate any impacts

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
30	Omission	In this section of the Plan, please summarize the mitigation steps to be taken to mitigate potential hazards to human health, safety and the environment. Any mitigation measures mentioned in sections 109.1 – 109.4 can be moved into this section. Please summarize the implementation of capping measures for the ore stockpile areas and DRAs.	mpb	

R647-4-110 - Reclamation Plan

110.2 - Roads, highwalls, slopes, drainages, pits, etc., reclaimed

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
31	Page 38, para 6-7	Please provide a design drawing for the proposed cement caps to be used to seal shafts.	pnb/ mpb	
32	Pg 37	The new paragraph added at the end of the "Road Reclamation" section referencing the culverts that will remain as per San Juan County request should be moved into Section 110.3, Surface Facilities to be Left.	mpb	
33	Pg. 39	The plan indicates that at reclamation, soil located beneath the stockpile exhibiting "elevated" radiation levels will be excavated and placed in the mine. Please clarify what is considered "elevated" and provide a standard in uR/hr for the removal of soil beneath the ore stockpile. The plan reports background measurements at the Daneros mine as 5uR/hr and includes a voluntary reclamation standard of 100 mrem/year above background. The 18" of capping material should be sufficient to achieve these background levels, but if more soil is needed, a plan should be in place to develop sufficient quantities of cover material to attain these levels. The above plan is pertinent for the existing Daneros Portal site.	aaa/m pb	

		As an alternative at the South Portal, the Division suggests removing and storing soil at the proposed ore stockpile pad location, and replacing with a layer of development rock prior to creating the ore stockpile pad. Excavated soil that falls below the minimum radiation standard can be used at reclamation to cover the development rock pad underlying the ore stockpile.		

110.3 - Description of facilities to be left (post mining use)

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
34	Pg 39	See comment 31 above	mpb	

110.4 - Description or treatment/disposition of deleterious or acid forming material

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
35	Page 40, para 2	**Original Comment 53:** Since Blanding is located about 40 miles east of the mine and slightly lower in elevation, it is not accurate to identify both meteorological information and tested materials from the mine as being "site-specific." Include the source for precipitation and evaporation data, acknowledge the distance between the mine and Blanding, and justify the use of the Blanding data. Justification may be included in Attachment J. **Revised Comment:** Explanation for the use and applicability of the Blanding precipitation data has not yet been included. PRISM Climate Data indicates the Daneros site receives on average 10.7 inches of precipitation per year, and Blanding receives 14.7 inches per year for the 30-year period of 1981-2010.	pnb	

110.5 - Revegetation planting program

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
36	Omission	Based on the transect locations in the Vegetation Inventory in Section 106.7, please add a statement that revegetation success will be determined based on a comparison of surrounding undisturbed areas of similar slope and aspect.	mpb	
37	Pg 42	This section says there will be 6" of topsoil placed over disturbed areas, and there will be 18" of loose inert material and topsoil placed as a cap over DRA's. Calculations from acreage figures provided in section 106.3 and stockpiled soils volumes provided in 106.6 do not support this. See comment 20.	mpb	

R647-4-113 – Surety

Comment #	Sheet/Page/ Map/Table	Comments	Initials	Review Action
38	Appendix L, 110.2	It appears the reclamation cost calculations assume that vent holes will be cased. Section 110.2 includes reclamation plans for both uncased and cased vent shafts. The Division will need to have reclamation cost calculations for backfilling and the number of vent holes to leave uncased to be consistent with the Notice. If vent shafts are to remain uncased (as the Notice states), please identify in Section 110.2 the source of the material used to backfill vent holes.	pnb	
39	Appendix L	Some of the text in the cost calculations toward the end of the section is missing and illegible. Please replace pertinent pages.	pnb	